

ABSTRACT OF THE DISCLOSURE

In an optical transmission system, an optical terminal transmits a plurality of tone signals corresponding to a plurality of gain bands, where the frequencies of the plurality of tone signals are different from each other, and each of the plurality of tone signals has a characteristic which is varied according to detected power of optical signals in the corresponding gain band.

Each optical repeater receives the plurality of tone signals, extracts the characteristics of the plurality of tone signals, and compares a signal representing each characteristic with a reference signal. The optical repeater controls the gains of optical amplification in the plurality of gain bands based on the comparison result so as to equalize the gains in the plurality of gain bands.